

Title (en)  
SOLENOID PUMP

Title (de)  
ELEKTROMAGNETPUMPE

Title (fr)  
POMPE À SOLÉNOÏDE

Publication  
**EP 3690245 B1 20210818 (EN)**

Application  
**EP 20153884 A 20200127**

Priority  
US 201916260741 A 20190129

Abstract (en)  
[origin: EP3690245A1] A solenoid pump (20) that includes a base (24) and a solenoid (22) having a coil (54) and a pole piece (56). A retainer body (114), positioned inside the solenoid (22) and the base (24), includes an armature cavity (117) that receives an armature (62) in a sliding fit for movement between energized and de-energized positions. A diaphragm (120), mounted in the armature cavity (117), is connected to the armature (62). An inlet check valve (125) permits fluid flow in only a first direction moving from an inlet port (30) toward the diaphragm (120). An outlet check valve (126) permits fluid flow in only a second direction moving from the diaphragm (120) toward an outlet port (32). A fluid flow path (131) extends through the retainer body (114) from the inlet check valve (125) to the diaphragm (120) and from the diaphragm (120) to the outlet check valve (126) for transporting fluid from the inlet check valve (125) to the outlet check valve (126) as the diaphragm (120) oscillates between first and second positions.

IPC 8 full level  
**F04B 17/04** (2006.01); **F04B 43/04** (2006.01); **F04B 53/22** (2006.01)

CPC (source: CN EP KR US)  
**F04B 17/04** (2013.01 - CN US); **F04B 17/044** (2013.01 - EP US); **F04B 43/04** (2013.01 - EP KR US); **F04B 45/047** (2013.01 - US); **F04B 53/10** (2013.01 - KR); **F04B 53/106** (2013.01 - CN US); **F04B 53/22** (2013.01 - EP); **F16K 31/0675** (2013.01 - US); **F16K 31/0693** (2013.01 - US); **H01F 7/16** (2013.01 - KR)

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
**EP 3690245 A1 20200805**; **EP 3690245 B1 20210818**; AU 2020200553 A1 20200813; BR 102020001909 A2 20200924; BR 102020001909 B1 20220517; BR 102020001909 B8 20220614; CA 3069354 A1 20200729; CN 111486073 A 20200804; CN 111486073 B 20220712; DK 3690245 T3 20210906; ES 2887260 T3 20211222; HR P20211394 T1 20211210; HU E055801 T2 20211228; JP 2020128744 A 20200827; JP 7429549 B2 20240208; KR 20200094680 A 20200807; MX 2020001120 A 20200806; NZ 761142 A 20211224; PL 3690245 T3 20211213; PT 3690245 T 20210920; RS 62276 B1 20210930; SI 3690245 T1 20211130; TW 202041806 A 20201116; TW I839451 B 20240421; US 11028837 B2 20210608; US 2020240540 A1 20200730; ZA 202000524 B 20210127

DOCDB simple family (application)  
**EP 20153884 A 20200127**; AU 2020200553 A 20200124; BR 102020001909 A 20200129; CA 3069354 A 20200122; CN 202010079092 A 20200203; DK 20153884 T 20200127; ES 20153884 T 20200127; HR P20211394 T 20210902; HU E20153884 A 20200127; JP 2020009846 A 20200124; KR 20200010299 A 20200129; MX 2020001120 A 20200128; NZ 76114220 A 20200124; PL 20153884 T 20200127; PT 20153884 T 20200127; RS P20211079 A 20200127; SI 202030008 T 20200127; TW 109102658 A 20200122; US 201916260741 A 20190129; ZA 202000524 A 20200127